



Aircraft Band Receiver

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TOOLS:

- [Small phillips and flat bladed screwdriver \(1\)](#)



PARTS:

- [Analog AM/FM receiver \(1\)](#)
from RadioShack. Make sure to get yourself a receiver with an analog dial, not an LCD tuning display.


SUMMARY

The FM radio band (88-108 MHz) lies just below the Civil Aviation Band (108-138 MHz), which is used for air traffic control, air shows, and other ground-to-air communications. This means that it's easy to modify an ordinary analog AM/FM radio to receive these transmissions.

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Step 1 — Get Yourself an Analog Portable Radio



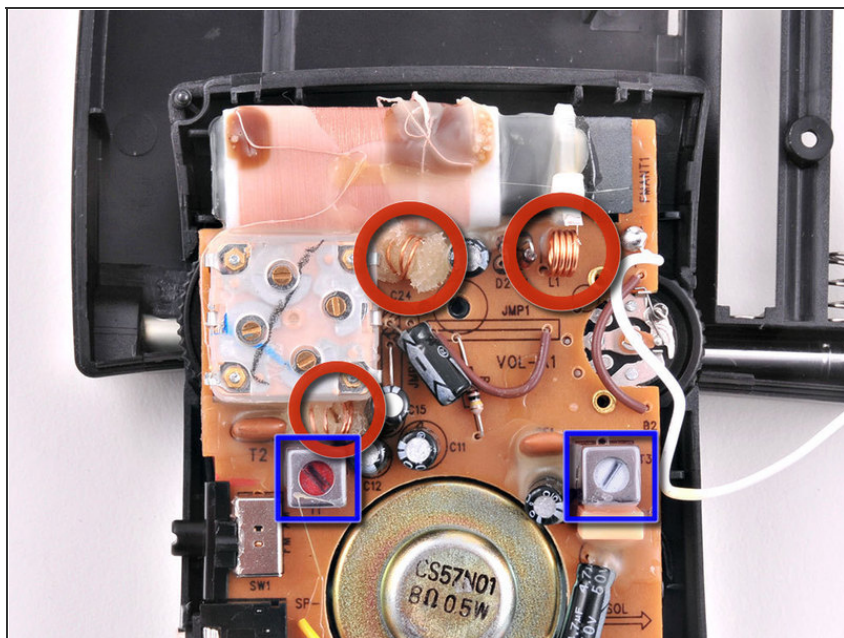
- Pick an older style AM/FM radio with a traditional tuning dial, not one with a synthesized tuner.
- For our project here we're using the venerable  RadioShack AM/FM Pocket Radio. (As of 11/9/12 the RadioShack Pocket Radio no longer uses analog tuning, It has the traditional dial, but now uses digital tuning. The copper loops referenced in the rest of the project no longer apply.)

Step 2 — Remove the Back Panel



- Remove the screws from the back of your radio and gently pry open the casing.
- Case screws to consumer electronics can frequently  be found inside of the battery compartment, so make sure to look there if your case isn't coming apart when you think you've removed all of the screws.

Step 3 — Locate the Coils



- Identify the three copper-colored coils (circled here in red) and the two tuning transformers (shown in the blue boxes).
- FYI: That clear plastic box to the left of the coils is the radio's tuning capacitor. Move the dial around on the front of the radio and you'll see its parts move inside the clear case.

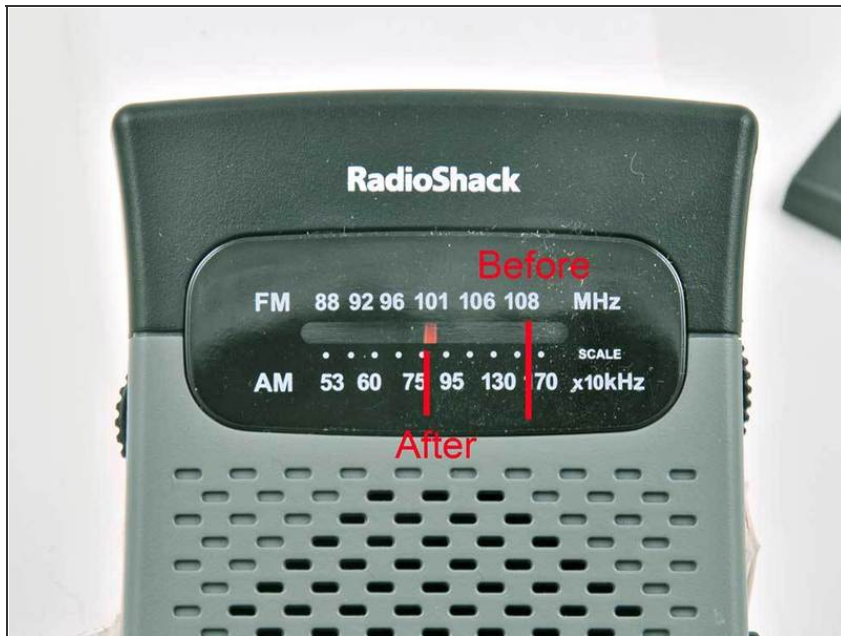


Step 4 — Adjust the coils



- Switch the radio on and set it to FM reception. Tune to a station high on the dial, as close as you can to 108 MHz.
- Using a flat screwdriver, slowly expand the coil windings on all three coils.
- You should notice the tuned radio station is moving slowly down the dial. This is good, as we are expanding the reception range of the radio in the band above 108 MHz.

Step 5 — Test it Out



- Retune the radio and check that the original station is still available, but lower down on the dial.
- In the picture you can see that the station around 108 MHz has now moved down to the location marked 101 MHz on the dial.
- The final step is to turn the radio dial in-between stations, so that all you hear is hiss. Now adjust the tuning transformers so that this hiss is at the loudest possible level.
- Congratulations! The modifications are complete. Put the case back on and let's pay a visit to the local airport to try it out.
- Get as close to the tower as you can, and tune the dial in the new extended region you just created. When planes are in the area, you should be able to pick up their communications!

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